have the masses of the feathery type of Caulerpa similar to those in Bahia Candelero, on Isla Espiritu Santo. However, small patches of it were growing on the volcanic rocks in quite shallow water adjacent to the north end of the sand beach. This Caulerpa was clean of the troublesome small anemone but careful search produced no Berthelinia. In the same general area, however, small patches of a different species of Caulerpa occurred, growing at the sides and between the lava boulders. This was a "bunch-grape" type, quite similar in its dark blue-green color and general characters to the Japanese Caulerpa okamurai. A major difference, however, was the flat, circular ends occurring in many but not all of the terminal branches of this alga. Berthelinia was discovered in this alga in some quantity and in size from juveniles to at least one presumed adult specimen with a shell length of 8.45 mm. Water temperature at this location was 82-83° F., with air temperature 84° F. It is worthy of note that our specimens were found under exactly the same conditions described for bivalved gastropods collected alive by Kawaguti in Japan and by Burn in Victoria, Australia.

A quantity of the alga from Bahia Puerta Ballandra was also brought home in a canvas bucket and search of this brought the number of specimens collected in this bay to about 50. The alga also produced a number of juvenile Oxynoe and several specimens of a grayish-colored nudibranch an inch or so in length.

The living specimens of Berthelinia and Oxynoe were brought aboard the boat and close-up photographs taken with an Exacta camera fitted with rings and using electronic flash. This proved to be somewhat difficult under conditions that had to be improvised, but mainly because the animals of both species were extremely active, crawling over each other and continually getting out of focus and upsetting the composition of the picture.

Although the same attempt was made to bring both species back alive for laboratory observation, this again proved unsuccessful, due perhaps to putting too much Caulerpa in the plastic thermos in relation to the quantity of water. It is reasonably certain, if this situation is corrected, that it will be possible to maintain live specimens of this Berthelinia in the laboratory, possibly by using an injection of oxygen during transportation similar to the technique followed in shipping small tropical fish by air. Such a procedure will be tried with the next opportunity to collect Berthelinia alive and transport it.

Perhaps it should be mentioned that small amounts of a type of Caulerpa, similar to, but smaller and lighter green in color, than the species from Bahia Puerta Ballandra, was found among masses of the feathery type collected in Bahia Candelero. It is not certain whether Berthelinia lives on this species normally in preference to the common species of the feathery type. Certainly this opisthobranch mollusk is not at all common on the latter type and specimens collected are quite small in size.

Samples of the types of Caulerpa collected in the La Paz region have been submitted for identification to Dr. George Papenfuss, Botany Department, University of California.

## California State Regulations on Collecting Abalone

by

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In view of Keith Cox's splendid paper on abalone, reviewed in this issue, conchologists and collectors should be familiar with the requirements for taking them legally. The California law and the regulations of the State Department of Fish and Game establish seasons, minimum sizes and bag limits for the taking of abalone for sport (non-commercial) purposes. Under present sportfishing regulations the minimum legal sizes are as follows; red, 7; green, 6¼; pink, 6; black, 5; and all other species, 6 inches in greatest shell diameter. Open season is March 16 to January 14. Limit is five abalones in combination of all species. "Fishing" hours are from one-half hour before sunrise to one-half hour after sunset. Special requirements include (1) carrying an accurate measuring device; (2) abalones of less than minimum size, if detached, must be replaced without delay on their original locations with the shell uppermost; (3) legal-sized abalones must be brought ashore above high water mark attached to their shells and alive; (4) no transportation or possession of abalones not in their shells, except when being prepared for immediate consumption; (5) no device longer than 36 inches, commonly called an abalone iron, can be used; (6) SCUBA divers cannot take abalones in California north of Yankee Point, Monterey County; and (7) last and by no means least is the pos-

session of a regular fishing license ($3. - for residents). Small numbers of undersized abalones of all species may be taken by collectors only under a special Scientific Collector's Permit issued by the State Department of Fish and Game (cost $5.-) generally only to persons affiliated with educational or scientific institutions.

The regulations apply to the taking of abalones alive. Presumably, dead shells washed up on the beach or elsewhere may be collected with impunity but even under these conditions it may be difficult to convince some game wardens that good undersized fresh shells were really "dead" when picked up.

## About the Supplement

It is with great regret that we must announce that due to sudden ill health it will not be possible for Miss Steinberg to complete the key to the West Coast Opisthobranchs, nor the glossary. However, we shall proceed with the publication of the portion by Professor Marcus. The key and glossary will be published as soon as possible and will be mailed to those who have purchased the supplement, without additional charge. — Editor.

## New Western Shell Clubs

In the NORTHWEST —

The Northwest Shell Club held an organizational meeting on September 18, 1960, in Seattle, Washington, in the home of Mr. W. Jackson Sallee. The second organizational meeting to approve the charter was held on November 13, 1960, at Point Defiance Aquarium in Tacoma, Washington. At that time there was also a discussion of local dredging.

At the first meeting the following officers were elected: President — Tom Rice, Poulsbo; Vice-President — Dr. Phil Spicer, Centralia; Secretary — Miss Joan Shields, Seattle.

The Club was organized to promote the study of malacology. Any collector interested in this goal is invited to become a member of this new Club. Dues are $2. per year for full members, $1. for junior members. Residents of the Pacific Northwest are especially urged to join.

Further information will be furnished upon request by:

Tom Rice, Route 2, Box 483, Poulsbo, Wash.
or
Miss Joan Shields, 418 Loretta Pl. # 509, Seattle 2, Washington.

In the SOUTHWEST —

An organizational meeting for a San Diego Shell Club was held in the home of Mrs. Charles Harsh on November 6, 1960. Mr. R. O. Stotter of 1046 Ocean, Imperial Beach, California, will serve as president for the remainder of the year 1960. Mr. William Naylor of 3616 Curlew Street, San Diego, and Mrs. Ray Webb of 730 Date Avenue, Chula Vista, will similarly serve as Vice-President and Secretary, respectively. Information concerning meetings and plans for the future can be provided by these officers.

# Methods & Techniques

## A Simple Device for Sorting Microscopical Shells from Sand Samples

by

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(With 1 Textfigure)

The task of separating minute shells from sand can be speeded by using a mechanical device to move a thin ribbon of sand under the field of a binocular dissecting microscope. A narrow endless belt, mounted on rollers and hand driven by a wheel connected to one of the roller axles, moves the sand. A hopper, whose exit is slightly narrower than the microscope field is mounted over the centerline of the belt just far enough from the curve of the roller so that the belt beneath the hopper opening is flat. The clearance between the hopper and the belt is adjusted to suit the grain size of the sample by turning a threaded post which controls the